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ROAD ACCIDENTS IN BRAZIL

Sandra Furlan RIBEIRO, Architect, MSc.
José R. R. GÓES, Civil Engineer, MSc

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1. ROAD ACCIDENTS, SOCIAL AND ECONOMIC COSTS

Brazil continues to present high rates of traffic accidents which is a clear picture of the violence in traffic, and the situation is getting worse, not only by the amount of people killed or injured but also by the high social and economic costs due to these accidents (see Figure 1).

A study published by the IPEA - The Institute of Applied Economical Research in 2002 calculated that the social costs of traffic accidents in urban areas of Brazil are close to US$1.9 billion per year, and that one traffic accident has an average cost of US$3,111. If there are any deaths, this figure can go to as much as US$51,172, quite a significant amount, even for developed countries.

2. DISCREPANCY IN STATISTICAL DATA

The discrepancy found in the data regarding traffic accidents disclosed by several sources has made clear the need for a new and more up to date data base, that relays a more reliable portrait of the country.

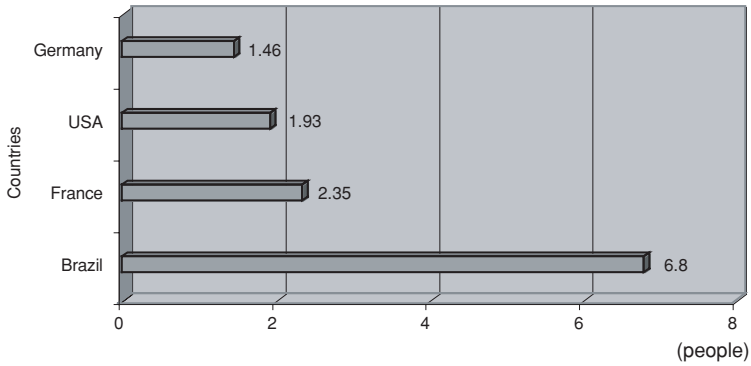
Official statistics show that the occurrence of deaths by traffic accidents is underestimated, due to the fact that only the victims at the scene of the accident are taken into consideration. Thus, in 2001 the National Department of Traffic - DENATRAN, an agency of the Ministry of Cities, registered 18,877 deaths in road accidents (see Table 1).

The statistics from the Ministry of Health registered at the same period 30,537 deaths caused by traffic accidents. However, according to information provided by FENASEG - The National Federation of Private Insurance Companies, 36,521 deaths due to traffic accidents were indemnified using the resources from the compulsory insurance.

3. PARTICULARITIES OF ACCIDENTS IN BRAZIL

Even though traffic accidents represent the 8th cause of the total mortality in Brazil (see Figure 2), according to the Ministry of Health, they represent the first and the second causes of fatalities between the ages of 20 and 39 (see Table 2). It has been pointed out that 44% of the deaths occurred at this age.

According to DENATRAN about 80% of the acci-



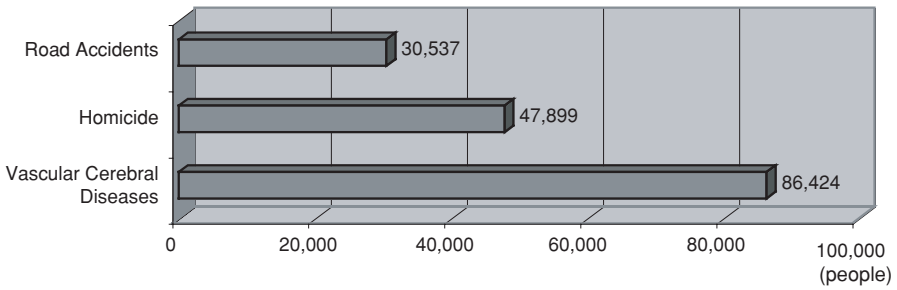
Source: IPEA

Fig. 1 Rates of deaths per 10,000 vehicles - 2001

Table 1 Fatalities rates

Year	1997	1998	1999	2000	2001	2002
Fatal Victims / 10,000 vehicles	8.3	6.5	7.0	6.8	6.3	6.2
Accidents with Victims / 10,000 vehicles	113.4	84.8	116.5	99.3	96.2	75.8
Victim of Accidents / 100,000 habitants			242.5	225.8	228.9	219.5
Fatal Victims / 100,000 habitants	15.1	12.4	13.8	11.8	11.6	12.3

Source: DENATRAN



Source: Ministry of Health

Fig. 2 Main causes of death

Table 2 Deaths per age group

Age Group	Deaths by traffic accidents		Deaths by other causes	
	Number	%	Number	%
Less than 1	95	0.31	61,846	6.44
1 to 9	1,450	4.75	16,096	1.68
10 to 19	3,602	11.81	25,691	2.67
20 to 29	7,332	24.04	52,104	5.42
30 to 39	6,002	19.68	61,901	6.44
40 to 49	4,619	15.14	86,987	9.06
50 to 59	3,071	10.07	113,311	11.80
60 to 69	2,110	6.92	154,776	16.11
More than 70	1,934	6.34	383,608	39.93
Ignored	286	0.94	4,294	0.45
Total	30,501	100.00	960,614	100.00

Source: Ministry of Health

Table 3 Evolution of fleet, population, motorization

Year	Fleet (× 1000)	Population (× 1000)	Motor vehicle per (× 100 population)
1997	28,886	159,636	18.1
1998	30,939	161,790	19.1
1999	32,318	163,947	19.7
2000	29,503	169,590	17.4
2001	31,913	172,385	18.5
2002	34,284	174,632	19.6

Source: DENATRAN

dents during the year 2001 took place in urban areas, where around 70% of the Brazilian population is concentrated (see Table 3). Pedestrians, cyclists and motorcyclists represent the most vulnerable group and together they make up 65% of the deaths caused by accidents (see Figure 3).

From the total of accidents with casualties, motorcycles were involved in 25% of cases, although they represent 11% of the national fleet. Once the motorcycle fleet reaches 15% of the total fleet in 2004, this picture might get worse.

4. INDEX PER REGION

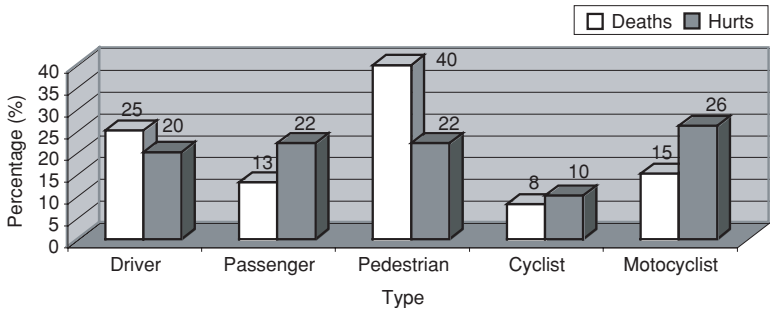
The mortality rates caused by accidents vary within the five geographical regions of the country, which have continental dimensions. This difference can also be observed by the evolution of the fleet (see Table 4).

According to the Ministry of Health, between 1979 and 1995, while there was a reduction in mortality rates caused by traffic accidents in the North, the Northeast, South and Middle East showed an increase of 19,4%, 42% and 82.4% respectively. In the Southeast, the rates remained stable. From the total traffic accident deaths in Brazil in the year 1999, about 45% of them took place in the Southeast. Nevertheless, the Southern and Middle Eastern regions were responsible for the highest mortality rates in the country, 26 to 27 deaths to every 100,000 inhabitants.

5. INSTITUTIONAL CHANGES AND SECURITY PROGRAMMES IN PROCESS

In January 1998, the brand new Brazilian Traffic Code was released with tougher legislation and more severe punishment for transgressors. Speed control measures were taken and the use of the seat belt became mandatory, which contributed to a decrease of the growth in the mortality numbers over the last decade.

These effects, however, risk being nullified by the rising levels of motorization in Brazil. Another aspect



Source: DENATRAN

Fig. 3 Percentage of deaths in traffic accidents - 2001

Table 4 Fleet per region of the country - 1990 to 2003

Country/Region	Total Fleet						
	1990	1991	1992	1993	1994	1995	1996
Brazil	18,267,245	20,615,779	21,253,690	22,655,650	24,145,966	26,609,232	27,747,815
North	362,499	413,643	428,387	453,945	551,957	575,071	669,605
Northeast	1,782,923	2,051,296	2,171,844	2,323,368	2,491,729	2,648,682	2,908,753
Southeast	10,979,245	12,554,388	12,696,766	13,525,604	14,376,200	16,219,016	16,540,785
South	3,913,051	4,220,154	4,395,288	4,573,380	4,789,937	5,021,632	5,472,845
Middle West	1,229,527	1,376,298	1,561,405	1,779,353	1,936,143	2,144,831	2,155,827

Country/Region	Total Fleet						
	1997	1998	1999	2000	2001	2002	2003
Brazil	28,886,388	30,939,466	32,318,646	29,503,503	31,913,003	34,284,967	36,658,501
North	764,139	831,304	919,218	819,605	934,461	1,054,358	1,184,259
Northeast	3,168,819	3,427,849	3,631,465	3,342,839	3,701,422	4,079,993	4,448,287
Southeast	16,862,552	17,996,061	18,546,978	16,686,833	17,890,927	19,013,742	20,083,423
South	5,924,056	6,323,455	6,682,022	6,349,330	6,852,260	7,366,353	7,928,580
Middle West	2,166,822	2,360,797	2,538,963	2,304,896	2,533,933	2,770,521	3,013,952

Source: DENATRAN

concerns the bad quality of the data that not only compromises the behavioral analysis of traffic accidents, it also limits the formulation of more specific preventive measures.

Some actions have been taken by DENATRAN regarding the National Politics of Traffic, such as:

- The National Exam of Traffic Instructors - ENIT and The National Exam of Traffic Examiners - ENET, with the purpose of evaluating the profile and knowledge of the examiners of driving schools and those of DETRAN.
- The settlement of the National Record of Traffic Transgression, which allows for the registration and the application of penalties for traffic transgressions practiced outside the state of origin of the vehicle is already being enforced in 9 states with the purpose of following up on and reducing the impunity for any traffic transgressions by motorists.

In order to obtain more efficient and effective preventive measures against accidents, any actions taken must be in association with investments in the quality of engineering, better control of the quality of vehicles, management of the risk factors (above all, speed and alcohol abuse), besides educational programs directed towards drivers and pedestrians.